



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/667,079

09/18/2003

Yung-Chao Tseng

250320-1050

1446

24504

7590

08/23/2007

THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP

100 GALLERIA PARKWAY, NW

STE 1750

ATLANTA, GA 30339-5948

EXAMINER

TOPGYAL, GELEK W

ART UNIT

PAPER NUMBER

2621

MAIL DATE

DELIVERY MODE

08/23/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/667,079	Applicant(s) TSENG ET AL.	
	Examiner Gelek Topgyal	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 18 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-2 and 5-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nonweiler (US 5,483,296) in view of Watkins (US 6,728,477).

Regarding claim 1, Nonweiler teaches method for enhancing the image resolution, wherein the method is applied to an image data carrier for storing or playing a high-resolution image at least twice the standard image resolution, the method comprising the following steps:

b. decomposing the high-resolution image into a plurality of primary images data of standard image resolution (Figures 2-4 and col. 7, lines 28-59 teaches wherein a high resolution image is decomposed into a plurality of smaller resolution images); and

However, Nonweiler does not particularly teach the following:

a. defining a video-audio data format and a plurality of user data formats on the image data carrier;

c. storing one set of the primary image data into the video-audio data format of the image data carrier and storing another primary image data set into the plural of user data formats.

Art Unit: 2621

In an analogous art, Watkins teaches in col. 5, lines 19-42 wherein multiple viewing angles of a particular shot can be recorded into separate VOB units (Fig. 3, 82) on a particular medium. The medium's format, including the ability to define VOB units for a particular medium meets the claimed video-audio data format and the user data format of the image data carrier.

Nonweiler teaches in col. 9, lines 30-33 and col. 6, lines 49-52 that the storing of the plurality of the smaller resolution images are likened to that of a "multiplexer or a commutator". Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the ability to record the plurality of images of Nonweiler into the separate VOBs as taught in Watkins in order to improve organization of the media stored on a particular medium.

Regarding claim 2, the proposed combination of Nonweiler and Watkins teaches the limitations as discussed in claim 1 above, and furthermore, Watkins teaches wherein the image data carrier is a DVD medium (Fig. 2, DVD disk 66).

Regarding claim 5, the proposed combination of Nonweiler and Watkins teaches the limitations as discussed in claim 1 above, and furthermore, the VOBs of Watkins (Fig. 3, 82) each stores a particular camera angle (VOB-Angle 1, VOB-Angle 2, etc).

Regarding claim 6, the proposed combination of Nonweiler and Watkins teaches the limitations as discussed in claim 1 above, and furthermore, the video recorded in the disc of Watkins is that of a DVD format. Therefore, it is inherent

Art Unit: 2621

that the recorded video is recorded in the format of MPEG. Furthermore, VCD and SVCD record video in the format of MPEG as well.

Regarding claim 7, the proposed combination of Nonweiler and Watkins teaches the limitations as recited in claim 1 above, and furthermore, Nonweiler teaches the claimed wherein the manner of decomposing high-resolution image in step (b) is:

evenly decomposing and distributing the plural image pixels of the high-resolution image, adjacent along a vertical direction or a horizontal screen (Figures 3 and 4) on a screen, into corresponding plural pixels of primary image data, wherein the corresponding plural pixels are located at a same pixel position (Figures 3 and 4, and col. 7, lines 28-59 teaches the claimed. Each of the plurality of images stores pixels at the same location corresponding to the high resolution image).

Regarding claim 8, the proposed combination of Nonweiler and Watkins teaches the limitations as recited in claim 1 above, and furthermore, the system of Watkins is recorded with the plurality of images by way of encoding the image data for playback (col. 5, lines 18-53).

Claims 9 and 10 are rejected for the same reasons as discussed in claim 6 above.

Regarding claim 11, the proposed combination of Nonweiler and Watkins teaches the limitations as recited in claim 1 above, and furthermore, Nonweiler teaches in col. 6, lines 15-17 that the procedures as discussed above (to divide

Art Unit: 2621

the high resolution image into a plurality of lower and standard resolution images) is reversed during reproduction of the video stored.

3. **Claims 12-13, 16-26, 28-35** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nonweiler (US 5,483,296) in view of Watkins (US 6,728,477) and further in view of Crinon et al. (US 6,285,804).

Regarding claims 12, Nonweiler teaches a method for enhancing the image resolution, wherein the method is applied to an image data carrier for storing or playing a high-resolution image that is at least twice the standard image resolution, the method comprising the following steps:

b. decomposing the high-resolution image into plural primary image data of standard image resolution (Figures 2-4 and col. 7, lines 28-59 teaches wherein a high resolution image is decomposed into a plurality of smaller resolution images);

However, Nonweiler does not particularly teach the following:

a. setting the image data carrier to have a video-audio data format and plural user data format;

c. storing the plural primary image data into the user data format;

e. storing the secondary image data into the video-audio data format of the image data carrier.

In an analogous art, Watkins teaches in col. 5, lines 19-42 wherein multiple viewing angles of a particular shot can be recorded into separate VOB units (Fig. 3, 82) on a particular medium. The medium's format, including the

Art Unit: 2621

ability to define VOB units for a particular medium meets the claimed video-audio data format and the user data format of the image data carrier.

Nonweiler teaches in col. 9, lines 30-33 and col. 6, lines 49-52 that the storing of the plurality of the smaller resolution images are likened to that of a "multiplexer or a commutator". Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the ability to record the plurality of images of Nonweiler into the separate VOBs as taught in Watkins in order to improve organization of the media stored on a particular medium.

The proposed combination of Nonweiler and Watkins fails to teach the following:

d. calculating an average of the pixels at the same positions in the plural primary image data for forming a secondary image data (); and

In an analogous art, Crinon et al. teaches in Figure 7 and in col. 5, lines 28-59 teaches spatial interpolation wherein "the four nearest pixel values" of each of the plurality of smaller resolution images 16 are used to create a high resolution image 19. The four nearest pixels values can be an average value.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the ability to create an averaged image by utilizing the average value of "the four nearest pixel values" of each image 16 as taught in Crinon et al. so that it can be stored into another VOB-Angle-n as taught by the proposed combination of Nonweiler and Watkins to allow for the user with the option to view different types of video on the stored on the medium.

Art Unit: 2621

Claim 13 is rejected for the same reasons as discussed in claim 2 above.

Claims 16-21 are rejected for the same reasons as discussed above in claims 5-10, respectively.

Claims 22-24 are rejected for the same reasons as discussed above in claims 8-10, respectively, as both all angle data (VOB-Angle 1, VOB-Angle 2, etc) are encoded in MPEG format.

Claim 25 is rejected for the same reasons as discussed in claim 11 above.

Apparatus claim 26 is rejected for the same reasons as discussed in the method claim 12 above.

Apparatus claim 28 is rejected for the same reasons as discussed in claim 5 above.

Apparatus claim 29 is rejected for the same reasons as discussed in claim 8 above.

Apparatus claim 30 is rejected for the same reasons as discussed in claims 9 and 10 above.

Playback apparatus claims 31-35 are rejected for the same reasons as discussed above in encoding apparatus claims 26-30, respectively, and furthermore Watkins teaches in Fig. 4, of a decoder 112 to decode the images for display. The apparatus for encoding as recited in claims 26-30 is capable of reproducing the video stored on the medium for display.

Art Unit: 2621

4. **Claims 3-4, 14-15 and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nonweiler (US 5,483,296) in view of Watkins (US 6,728,477) and further in view of De Bruijne (US 6,944,392).

Regarding claims 3 and 4, the proposed combination of Nonweiler and Watkins teaches the claimed as discussed in claim 1 above, however, fails to teach wherein the image data carrier is a VCD or a SVCD medium.

In analogous art, De Bruijne teaches in col. 2, lines 15-23 of the ability to store video into any type of medium, including VCD or a SVCD.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the ability to record the plurality of video of the proposed combination of Nonweiler and Watkins into VCDs or SVCDs as taught by De Bruijne to increase the distribution ability by matching the formats of different types of players.

Claims 14 and 15 are rejected for the same reasons as discussed above in claims 3 and 4, respectively.

Apparatus claim 27 is rejected for the same reasons as discussed in claims 2-4 above.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art teaches relative art that divides a frame into a plurality of frames and stores them.

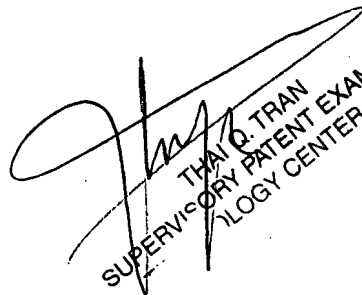
Art Unit: 2621

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gelek Topgyal whose telephone number is 571-272-8891. The examiner can normally be reached on 8:30am -5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thai Tran can be reached on 571-272-7382. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GT
8/20/2007


THAI Q. TRAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800